

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
11 March 2004 (11.03.2004)

PCT

(10) International Publication Number  
**WO 2004/019975 A3**

(51) International Patent Classification<sup>7</sup>: **A61K 39/00**,  
A61P 37/08, 11/00

(21) International Application Number:  
PCT/GB2003/003729

(22) International Filing Date: 28 August 2003 (28.08.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
0220211.7 30 August 2002 (30.08.2002) GB  
0304672.9 28 February 2003 (28.02.2003) GB

(71) Applicant (*for all designated States except US*): **GLAXO GROUP LIMITED** [GB/GB]; Glaxo Wellcome House, Berkeley Avenue, Greenford, Middlesex UB6 0NN (GB).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **ELLIS, Jonathan, Henry** [GB/GB]; GlaxoSmithKline, Gunnels Wood Road, Stevenage, Hertfordshire SG1 2NY (GB). **ASHMAN, Claire** [GB/GB]; GlaxoSmithKline, Gunnels Wood Road, Stevenage, Hertfordshire SG1 2NY (GB).

(74) Agents: **EASEMAN, Richard, Lewis et al.**; Glaxo-SmithKline, 980 Great West Road, Brentford, Middlesex TW8 9GS (GB).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:  
8 July 2004

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: IL-14 VACCINE FOR THE TREATMENT OF ASTHMA AND ATOPIC DISORDERS

(57) Abstract: The present invention relates to IL-13 vaccines and their use in the treatment of diseases that are treatable with neutralisation of IL-13, such as COPD, asthma and atopic disorders such as hayfever, contact allergies and atopic dermatitis. The vaccines of the present invention comprise an IL-13 immunogen and an adjuvant composition which is a combination of a saponin and a non-toxic derivative of LPS. The invention further relates to pharmaceutical compositions comprising such immunogens and their use in medicine and to methods for their production.

WO 2004/019975 A3

# INTERNATIONAL SEARCH REPORT

ational Application No

PCT/GB 03/03729

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61K39/00 A61K39/39 A61P11/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61K C07K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, BIOSIS, EMBASE

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 00/65058 A (M & E BIOTECH) 2 November 2000 (2000-11-02) cited in the application the whole document	1-19
Y	WO 01/05820 A (M & E BIOTECH) 25 January 2001 (2001-01-25) the whole document	1-19
Y	WO 01/34645 A (THE GOVERNMENT OF THE UNITED STATES OF AMERICA) 17 May 2001 (2001-05-17) the whole document	1-19
	-/-	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*Z\* document member of the same patent family

Date of the actual completion of the international search

6 May 2004

Date of mailing of the international search report

17/05/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax (+31-70) 340-3016

Authorized officer

Moreau, J

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 03/03729

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	MOORE A ET AL: "The adjuvant combination monophosphoryl lipid A and QS21 switches T cell responses induced with a soluble recombinant HIV protein from Th2 to Th1." VACCINE. 4 JUN 1999, vol. 17, no. 20-21, 4 June 1999 (1999-06-04), pages 2517-2527, XP004169661 ISSN: 0264-410X the whole document	1-19
Y	SILLA S ET AL: "Enhancement by IL-12 of the cytolytic T lymphocyte (CTL) response of mice immunized with tumor-specific peptides in an adjuvant containing QS21 and MPL." EUROPEAN CYTOKINE NETWORK. JUN 1999, vol. 10, no. 2, June 1999 (1999-06), pages 181-190, XP008001564 ISSN: 1148-5493 the whole document	1-19
Y	WO 01/62287 A (ADVANCED BIOTHERAPY) 30 August 2001 (2001-08-30) the whole document	1-19
P,X	WO 02/070711 A (GLAXO GROUP LIMITED) 12 September 2002 (2002-09-12) the whole document	1-19

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/GB 03/03729

### Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:  
  
Although claim 19 is directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

### Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

#### Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 03/03729

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0065058	A	02-11-2000	AU 4100800 A	10-11-2000
			CA 2370391 A1	02-11-2000
			CN 1355846 T	26-06-2002
			CZ 20013709 A3	13-11-2002
			WO 0065058 A1	02-11-2000
			EE 200100552 A	16-12-2002
			EP 1173573 A1	23-01-2002
			HR 20010824 A1	31-12-2002
			HU 0200958 A2	29-06-2002
			JP 2002543098 T	17-12-2002
			NO 20015021 A	21-12-2001
			PL 351986 A1	14-07-2003
			SK 14832001 A3	04-02-2003
			TR 200103046 T2	21-06-2002
WO 0105820	A	25-01-2001	AU 5967500 A	05-02-2001
			CA 2379852 A1	25-01-2001
			CN 1384757 T	11-12-2002
			WO 0105820 A2	25-01-2001
			EE 200200025 A	15-04-2003
			EP 1200119 A2	02-05-2002
			HR 20010900 A1	31-08-2003
			HU 0201861 A2	28-09-2002
			JP 2003506325 T	18-02-2003
			NO 20016252 A	15-03-2002
			PL 353855 A1	01-12-2003
			SK 722002 A3	04-02-2003
			TR 200200133 T2	21-05-2002
			ZA 200109901 A	28-02-2003
WO 0134645	A	17-05-2001	AU 1599301 A	06-06-2001
			CA 2404763 A1	17-05-2001
			EP 1263785 A2	11-12-2002
			WO 0134645 A2	17-05-2001
WO 0162287	A	30-08-2001	AU 4321901 A	03-09-2001
			WO 0162287 A1	30-08-2001
WO 02070711	A	12-09-2002	BR 0207819 A	02-03-2004
			CA 2439628 A1	12-09-2002
			CZ 20032373 A3	14-01-2004
			EP 1368477 A1	10-12-2003
			WO 02070711 A1	12-09-2002
			HU 0303372 A2	28-01-2004
			NO 20033882 A	31-10-2003
			US 2003194391 A1	16-10-2003